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ABSTRACT

This paper examines Lev Vygotsky's theory concerning the zone of proximal development (ZPD) in children and its relevance to early childhood education. As per Vygotsky's "Mind in Society" (1978), ZPD is the difference between a child's "actual development level as determined by independent problem solving" and the "potential development as determined through problem solving under adult guidance or in collaboration with more capable peers." The paper focuses on the different nature of ZPD in the context of real world and pretend world activities of young children and how these activities differ in terms of parameters and motivations. Various studies on the application of ZPD to early childhood education are reviewed, especially in regard to guided participation, scaffolding, mediated learning, and other instructional techniques. The paper concludes by noting that while a Vygotskian perspective has theoretical and concrete value for early childhood education, further investigation is needed to extend Vygotsky's conceptions and to clarify their educational implications. Contains 14 references. (MDM)

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ZONE OF PROXIMAL DEVELOPMENT AND THE WORLD OF THE CHILD

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Abstract

The purpose of this paper is to present one aspect of Vygotsky's theory, in particular his zone of proximal development, and to examine its relevance to early childhood education. The focus is on the different nature of the zone of proximal development in the context of two distinctive types of activities which dominate the world of children's learning. The discussion is on the distinction between the real world and the pretend world activities of young children and how these activities differ in terms of partners and motivations. This distinction has been of particular interest and value to the study of children's social and emotional development. The activities are conceptualised within a Vygotskian framework and the separate role of each in the world of the child will be discussed. While the gist of the paper is that a Vygotskian perspective has theoretical and concrete value for early childhood education, further investigation needs to be done to extend Vygotsky's conceptions and to clarify their educational implications. Promising areas for further research work are indicated.

Introduction

The past ten years have seen a major revival of interest in the ideas of Lev Semenovich Vygotsky (1896-1934) accompanied by a marked increase in the citations of his publications. Several new volumes about Vygotsky's life and work (Kozulin, 1990; Newman & Holzman, 1993; Ratner, 1991; van der Veer & Valsiner, 1991) and fresh translation of his writings have also emerged. Why this has been so is not altogether clear but it is suspected that recent republication and translation into English of Vygotsky's hidden written materials and the emigration of several notable Russian psychologists to the West, have made this possible. In addition, scholarly visits have recently taken place to the former Soviet Union and many of Vygotsky's ideas seem directly relevant to issues in education and psychology. The international research

community, especially the United States has been exposed to and been actively searching for new theoretical paradigms and Vygotsky's seminal views seem to address to many of these issues.

This paper highlights a perspective of one of Vygotsky's ideas on the conception of development that has particular relevance for early childhood education ie the zone of proximal development - and the discussion will focus on the distinction between two types of activity "real world activities" and "pretend world activities" . This distinction is of specific interest and value to help us think about young children's learning. In examining these points , we also touch on his use of a developmental method and his analysis of the social origins of mental processes. His sociocultural theory addresses the impact of the children's social and cultural worlds on their cognitive development. This theme has reemerged with considerable force in Western developmental psychology over the past 20 years .

Vygotsky - the Man and His Theory

Vygotsky was born in Russia in 1896 and died at the relatively young age of 38 in 1934. Despite his brief career, he has had a major influence on our thinking about cognitive development, not only in Russia and Eastern Europe, but in recent years in the Western world as well. At the time of his writing, the Communist Revolution had just come around in the then Soviet Union and much of Vygotsky's theory reflects the philosophy of the times. When Stalin came to power, however, much of the philosophy of the revolution was either subverted to fit his ends or repressed. Consequently, Vygotsky's work was banned in the early 1940s. Because of this, good translations of Vygotsky's work have only recently become available to psychologists and researchers in the west, and his theory has begun to receive the attention it deserves. (Rogoff, 1990).

Vygotsky's theory of development proposes an interaction between the child's social world and his cognitive development. He places great emphasis on the culture in which the child develops, and in particular, on the effect of the constructive role of peer interactions and relationships. Vygotsky's position is in marked contrast to Piaget's theory of development. Piaget and most Western theories of development focus on the individual as the unit of study whereas Vygotsky focuses on the social nature of cognitive development, and emphasizes the critical part that the social world plays in facilitating children's development.

For Vygotsky, development is best understood as a product of social interaction between partners who jointly solve problems together. It centers not on individuals but between people. Through the assistance provided by others in his social environment, the child gradually learns to function intellectually on his own and as an individual. According to Vygotsky, each child is given a set of innate abilities, such as attention, perception, and memory. Input from the child's society, in the form of interactions with more skilled

adults and peers, then molds these basic abilities into more complex, higher order functions.

Vygotsky proposed the "genetic or developmental method" of analysing human mental processes, stating that only by studying the development of an organism can you fully understand it . He defined development in terms of revolutionary or abrupt shifts rather than steady quantitative increments. He was a stage theorist, since the qualitative nature of development changes at these transition points. In addition, he accounted for shifts in development by the types of mediation that children rely upon to understand their world. Mediators can take a variety of forms but generally refer to tools or signs. Of particular interest to Vygotsky were psychological tools such as language, counting, mnemonic devices, algebraic symbols, art or writing. As the child develops, the emergence of different types of signs or tools permit him to function more effectively in solving problems and understanding his cognitive world.

In the final years of his life, Vygotsky returned to the problems of teaching in schools and rooted his interest on the relationship between school teaching and cognitive development. In 1933 he lectured on this issue in Leningrad and argued that the various points of view regarding this problem of the relationship fell into three categories. These are according to van der Veer & Valsiner (1991) the following:

1. School teaching should follow development: the child's psychological functions should have reached a certain level of maturity, after which the teaching process can start.
2. Cognitive development is not based on maturation but teaching is the major force in promoting it. The ultimate consequence of this view is that cognitive development is seen as the shadow of teaching.
3. Child development is partly based on maturational processes and partly on teaching.

Vygotsky was fully satisfied with none of the above viewpoints, arguing that teaching and development are distinct processes and should not be confused. Child development cannot be seen in isolation from the teaching process however, since the relation between these two processes is highly complex and is certainly not to be compared to the relation between 'an object and its shadow'.

His main hypothesis is that teaching is only effective when it points to the road for development The school child, he said has to learn to transform an ability "in itself" into an ability "for himself" eg the process of writing requires functions that are hardly developed in the preschool child. The functions develop in the process of learning how to write ..the teacher, therefore, essentially creates the conditions for certain cognitive processes to develop, without directly implanting them in the child. (van der Veer & Valsiner, 1991 pg331)

To a large extent, Vygotsky has viewed mental functioning as a kind of action that may be carried out by individuals or by dyads and larger groups. (Wertsch, 1991). His view is

one in which mind is understood as "extending beyond the skin". Mind, cognition, memory, and so forth are understood not as attributes or properties of the individual, but as functions that may be carried out mentally.

All throughout Vygotsky's writings, the theme about the social origins of individual mental functioning has surfaced many times and one issue that has taken on particular importance in contemporary developmental psychology is the "Zone of Proximal Development". This phenomenon has taken off on a sort of life on its own in child developmental research literature, but from a Vygotskian perspective it is essential to remember how it is situated in an overall theoretical framework. It is a specific instance of a more general claim about the social origins of individual mental functioning.

The Zone of Proximal Development

As part of his emphasis on the genetic approach to studying human development, Vygotsky was not interested in children's intellectual abilities at a particular point, but in the child's POTENTIAL for intellectual growth. Thus, he proposed the notion of the ZONE OF PROXIMAL DEVELOPMENT. He defined the zone as the difference between a child's "actual developmental level as determined by independent problem solving" and the "potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p 86). Thus, a child's potential level of development was determined by the level of competence he displayed under the tutelage of either adults or more capable children through the use of instruction.

This concept has two implications. On the one hand, it represents an alternative approach to assessment of intelligence by examining the child's intellectual potential under optimal social conditions. On the other hand, the zone of proximal development represents a way of understanding how children's intellectual development occurs, namely, through social interaction with more sophisticated partners. Recent research (Rogoff, 1990) has illustrated the value of this approach in studies of children's learning, by showing that children's planning, problem-solving, and memory can be improved when guidance is provided by more skilled partners.

Consider the following example to illustrate his ideas about assessment:

> Imagine that we have examined two children and have determined that the mental age of both is seven years. This means that both children solve tasks accessible to seven year olds. However, when we attempt to push these children further in carrying out the tests, there turns out to be an essential difference between them. With the help of leading questions, examples, and demonstrations, one of them easily solves test items taken from two years above the child's level of (actual) development. The other solves test items that are only a half-year above his or her level of (actual) development. (Vygotsky, 1956, pp 446-447).

Vygotsky mentioned that in the past researchers such as Binet, used to think that one cannot start teaching children unless they have reached a certain age and level of development. A lot of effort, according to van der Veer & Valsiner (1991) had been spent to establish the lowest possible thresholds from which the teaching of various school subjects might be started. The way to establish these thresholds was to ask the child to independently solve some specified task or test.. However, Vygotsky argued, that there is also an upper boundary and that optimal periods do exist for the learning of an intellectual skill. There is hence a way to establish the optimal periods for learning various intellectual skills .

The Zone of Proximal Development (ZPD) has proven to be among the most useful, both theoretically and practically, of all the concepts advanced by Vygotsky. The ZPD serves as a connecting concept in Vygotsky's work, bringing together in a single construct the various strands of his thought pertaining to the sociogenesis of specifically cultural forms of thought (Moll, 1994). The ZPD represents, in particular, a concrete and pragrammatic manifestation of Vygotsky's broader theoretical contention regarding the genetic relationship between interpsychological and intrapsychological functioning.

On a practical front, Vygotsky has argued against the use of static, individual forms of assessment. There is too much of a tendency to rely exclusively on the analysis of a child's independent intellectual activity in some task setting. Traditional methods of psychological testing could uncover only the presence in the child of those mental functions that have already matured. Competencies or mental functions that are still developing or that are yet to develop, functions emerging "in vivo" as it were, remain hopelessly beyond the methodological purview of this traditional, individualistic approach to psychological assessment. The notion of ZPD was formulated precisely to reflect the presence of these potential competencies especially in the child's assisted performance on a task or in the joint , collective activity of the child and the more competent other.

The ZPD is the frame for social interactions that lead individual development. If peer interactions could promote development, we assume that peers can act as competent partners in the ZPD. In M.Cole's words, ZPD is "where culture and cognition create each other" (1985). Paraphrasing Cole's words, adults as partners in the ZPD guarantee that social-conventional culture and child cognition (and emotion) meet each other. We assume that peers playing as partners in the ZPD create at the same time opportunities for developing their cognitive (and emotional) functions and for negotiating and constructing their "peer culture" as indicated in some children's plays.

Real World Activities and Pretend World Activities of the Child

Vygotsky states that "any function in the child's cultural development appears twice, or on two planes. First it appears on the social plane, and then it appears on the psychological plane". (Wertsch 1985) The transition from one plane to another involves a

process in which the child's understandings change through interaction with representations that come to from outside." The ZPD is Vygotsky's attempt to conceptualise this interaction. In this transition, what was formerly social, existing outside the learner, becomes psychological, existing inside the learner.

For Vygotsky, the ZPD operates for both real world and pretend world activities. Real world activities are those in which a child maintains her day to day living, such as dressing, solving an arithmetic problem or making a pancake. These are essential to survive in the socio-cultural world. Pretend world activities, on the other hand, are primarily directed towards understanding the dynamics of and mastering the real world activities. (Goncu & Becker, 1992). Pretend world activities refer to a specific kind of play activity in which children represent the meaning of something by using something else but not the entire range of play activities. Eg they include role play such as pretending to be a doctor, with the role of the doctor being represented by the child's own enactment. Also pretend world activities can be activities in which children represent the meaning of an object by use of another one, like using the broomstick to represent a horse.

According to Goncu & Becker (1992) in real world activities, the partners are more competent individuals such as family members, friends or even peers. In pretend world activities, children do not have partners or the partners are equally competent peers. Real world and pretend world activities are distinct in terms of the sources of motivation which produce children's engagement in them. The motivation for children's engagement in real world activities comes from either the child or the more competent person. Both the child and the more competent person (eg the adult) wish to be a part of the culture and to interact in it. On the other hand, in pretend world activities, the motivation comes from only the child's desire to be engaged and to work through real world experiences which have affective value for the child.

Recently, Vygotskian research has been focusing on the nature of the ZPD in real world activities and has neglected the significance of the ZPD for pretend world activities. One possible explanation is that in the real world activities , representations not yet understood by the child are brought to her by another , more competent, person. It is easier to see the creation and operation of ZPD in the context of real world activities eg the child who with the help of an adult solves an arithmetic problem which she cannot solve alone is functioning in the ZPD. The adult's representations of the problem become progressively available to the child, who uses them to transform her own understanding.

The relevance of the ZPD for pretend world activities, however, is not so apparent. This was well described by Goncu & Becker (1992) for according to their research, in pretend play as in real world activities, the child works with, and comes to understand representations which she initially did not understand. But in pretend play, the representations not yet understood by the child are produced by the child herself. Thus, for Vygotsky, pretend play constitutes a ZPD regardless of the presence or absence of other people. This constitutes an extension of the concept of the ZPD eg

"when a child pretends to go to a doctor's office she externalises her knowledge about the situation, enacting more than she actually fully comprehends. She can then use her external representation to help her transform her understanding of what is involved in the real world social situation. It is the imagined situation itself which provides the child with a deeper insight into the meaning of the situation. The motivation for these pretend activities, coming as it does from the child, is inherently about the affective problems the child has in relation to social phenomena." (Vygotsky 1978)

The nature of the transition from functioning on a social (external) plane to functioning on a psychological (internal) plane is a major issue of inquiry for Vygotskian educators who are interested in early development and learning. This is of particular relevance to professionals and practitioners in early childhood education.

Vygotsky's Theory and Early Childhood Education

Vygotsky has offered us several fresh perspectives to view childhood development and education. His socio-cultural theory emphazises the various forms of how children and adults interact in the ZPD to enable children to develop greater competence in everyday activities. Rogoff (1990) suggests the construct of "guided participation" as a framework for understanding how children benefit from adult-child interaction in real world activities. She defines guided participation as a process during which the adult and child determine and carry out the learning activity.

There are five components in guided participation which play an important role in children's development in real world activities:

1 selecting the activity in which guidance takes place.
2 deciding the goals of the activity.
3 establishing bridges between what the child knows and what the adult wants to induct the child into
4 ensuring that the child attains independent functioning and
5 communicating in a number of dimensions.

In marked contrast to the guidance from the more competent person which characterises the process of the child's learning in real world activities, in pretend play a new possibility arises. Goncu & Becker (1992) agreed that as in real world activities, in pretend play learning may occur through the direct assistance of more competent people. The new possibility , is that the process of learning can emerge from the child herself. In play the child always behaves beyond his average age and above his daily behaviour; In play it is as though the child were a head taller than himself . In ZPD Vygotsky has extended the definition of play to include the transformation of an external representation

like a child's enactment of an imagined situation, to an internal understanding of that situation. (Vygotsky, 1978)

In Goncu & Becker's study (1978) they found that pretend play originates from unrealizable tendencies. Children engage in the imaginary world of pretend world in order to work through issues that they cannot deal with directly in the real world.. The educational implication is that pretend play should be seen as the child's world and since the child is an autonomous problem-solver, it is the child who guides herself or himself and any adult who participates. As teachers, we can use this activity to foster the child's creation of her own ZPD. As adults, we should be limited to providing environments that are conducive to children's play and the child should invite the adult into her pretend play world too.

In ZPD, Vygotsky was thinking of various types of play in which children imitate adults in pretend world activities He made reference to a commonly held, but ill-founded view of the process of imitation. (Vygotsky 1935) The common misunderstanding was the belief that children were capable of imitating anything as if imitation were nothing but a mechanical, automatic process that revealed nothing of the mind of the imitator. Vygotsky claimed that this is not so. He stressed a fundamental difference between humans and animals in imitational capacities. Unlike animals, children can imitate a series of actions that lie far beyond the boundaries of their own possibilities but they are, however, not infinitely large..

In Vygotsky's opinion, then, children can rise above their personal potential, while animals are confined to the zone of actual development. As noted by van der Veer & Valsiner (1991) children are far less limited in their capacity for imitation because they can, to a point, profit from instruction. In contrast to other species, children are capable of intellectual, insightful imitation and teaching can evoke and promote their cognitive development. In general, Vygotsky made it very clear that he attached great value to these forms of deferred imitation both for cognitive and emotional development.

One key relevant issue which Vygotsky's theory has contributed towards a better understanding of young children's development is the concept of sensitive periods. Many educators have been concerned in trying to establish the so called optimal periods for the instruction of specific subjects in the school. Montessori for example, had established empirically the optimal periods for instruction in the pre-school period. Vygotsky had alluded to this notion in one of his lectures and he only hinted at the existence of different sensitive periods in the ontogeny of various species. He mentioned the work of a Dutch biologist who had found that before and after certain periods an organism was less sensitive to particular stimuli. Vygotsky had introduced the ZPD as a concept linking up with the idea of sensitive periods The premise was that basically, one cannot wait for environmental interference for indifferent periods and if the organism is not stimulated at the right time, certain developments will not take place, or will take place only suboptimally.

Tasks that the child cannot perform independently, but can do so in cooperation with others should be taught to the child. However, he cautioned against comparing lower animals and complex processes. In dealing with children , we are working with processes of the development of higher psychological functions with a purely social nature, which evolve from the cultural development of the child and have cooperation and instruction as its source. (Vygotsky, 1934).

In the initial period of his academic life, Vygotsky had developed a profound interest in the deviant forms of psychological development. The psychology of handicapped children and adults were seen by him as an indispensable aspect of the general theory of human development. According to Kozulin (1990), the ZPD for the handicapped child seems to be particularly important because his or her actualized behaviour is so limited. Operationally, this zone is defined as the difference between the mental age of a child derived from the child's solitary performance and his or her performance when assisted by an adult. In practice, this means that any activity of a handicapped child must first take the form of an activity shared with an adult educator. The educator or teacher will then diagnose the depth of the zone and construct a sequence of activities , increasing the contribution to be made by the disabled child and decreasing the contribution to be made by the adult.

An important teaching skill involved here and which has received attention in recent years is scaffolding. Scaffolding is an instructional process by which the teacher adjusts or modifies the amount and type of support offered to the child that is best suited to his level of development. This has been well demonstrated in a variety of tasks by early childhood educators and researchers . The concept implies that teachers intervene more at the tougher parts, so that task difficulty is always within the ability range of the learner. Tasks are developmentally sequenced from easier to harder aspects.

The Vygotskian notions of the ZPD and social guidance are useful in understanding the transmission of culturally important skills for young children. Vygotsky has always recognised the significance of language and culture in child development and growth. There are two messages about culture that are evident in Vygotsky's theory. First, cultures vary in terms of the institutions and settings they provide to facilitate children's cognitive development. Developmentally and culturally appropriate activities in the schools can transform the ways in which young children organise their thoughts. A second implication is the importance of considering cultural contexts in our assessment of children's cognitive development.

Cognitive tasks should be embedded in their specific cultural context and serious underestimates of children's development can occur if the culturally appropriate nature of children's learning is ignored (Rogoff, 1990). A wide variety of cross-cultural studies have documented that children learn highly sophisticated and complex important skills through social guidance. Vygotsky has largely increased our appreciation of the significance of cultural variation in development and has made us appreciate the uniqueness of cultural domains and to think about cognitive development in context.

In applying Vygotskian ideas to early childhood education, one key area for further research is that of different agents mediating between a child and the world in the course of learning interaction. This paper has suggested that in the ZPD during real world activities, from the Vygotsky's perspective, it is through guided activities, motivated jointly by child and adult, that the child is inducted into his culture by more competent members. In the pretend world activities, the child is an autonomous problem-solver and it is the child who guides herself and any adult who participates. In both world activities, the child's interaction with the world is mediated by symbolic tools provided by the given culture.

Adults and more competent peers introduce symbolic tools to the child and teach him or her how to use them. The role of the human mediator is not fully elaborated within the Vygotskian theoretical framework. The human mediator appeared first and foremost as a carrier of signs, symbols, and meanings but Vygotsky made no attempt to elaborate the activities of human mediators beyond their function as vehicles of symbolic tools. This has left a gap in Vygotsky's theory of mediation. However, Rogoff (1990) in her work on guided participation has attempted to attend to this theoretical gap.

This lacunae has also been filled by the work of Feuerstein and his colleagues. Feuerstein's (1990) theory of mediated learning, which assigns the major role to a human mediator stressed that all learning interactions can be divided into direct learning and mediated learning. Learning mediated by another human being is indispensable for a child, because it helps to create in him or her those cognitive pre-requisites that then make direct learning effective. Feuerstein's work has included observations made of many culturally different groups and culturally deprived individuals and mentally handicapped children and adolescents.

According to Feuerstein (1990) there are many criteria of mediated learning but the three most important ones are intentionality, transcendence and meaning. One of the major contributions of the human mediator is to turn the learning situation from incidental into intentional, so that material is experienced rather than simply noted by the child. In optimal conditions children receive enough mediated learning through their parents and other caretakers. Unfortunately, in reality this has not been so. Sometimes children are deprived by their parents or teachers of mediated learning experience; they provide for the child's basic physical needs, but completely ignore the task of mediation in the child's learning. Feuerstein (1980) has insisted that it is not a primary defect of the child that leads to retarded performance, but the secondary lack of mediated learning.

The educational implications of Vygotsky's theory of the ZPD and Feuerstein's theory of mediated learning experience extend far beyond the issue of learning disabilities or special education. They draw our attention to the important fact that

'learning based on a solitary interaction of the child with the world is a theoretical mirage. The mediating participation of an adult or more competent peer is the necessary

condition for the establishment of cognitive prerequisites indispensible for the child's further learning. Mediation through another human being cannot be replaced by any technical or symbolic devices. Actually, the child's success in using technical or symbolic mediating agents depends on his or her cognitive readiness, which in turn depends on the mediated learning experience requiring mediation ." (Kozulin, 1990).

Conclusion

Vygotsky's theory of human development in general has engendered a number of educational applications. Specifically, his notion of the ZPD has already captured the attention of Western professionals. Although there is widespread agreement that Vygotsky's ideas are extremely rich and have major implications for contemporary research in developmental psychology, there are also major differences among these researchers over how these ideas should be understood and applied. The brief analysis of the Vygotskian approach to young children's learning and development in this paper should not remain uncontested.

There are some suggestions for further research to extend Vygotsky's conceptions and to clarify their educational implications. The following questions are worthwhile probing ;

eg
How might the growing differentiation of the young child's activities between the home and school be seen from a Vygotskian perspective?
How can we conceptualise the different ways children are being inducted into different cultures with different real world activities? What effects will these have on their pretend world activities?
Do adults also learn during an interaction with specific children as they mediate and guide?
Is there a relationship between the child's production of her own ZPD in pretend play activities and her production of her ZPD at a later time of her life when possibly she is a full participant in real world activities in her culture?

There are a few pivotal points which one can sum up Vygotsky's approach to a child's learning and development. The first of these is the child-centered character of his theory . The second pivotal point is the recognition that learning is not an individual process but a cultural-social one, both in respect to the symbolic tools internalised by the child as his or mental processes and in respect to the sociocultural context in which he is embedded.

The last pivotal point is the role of the human mediator in the child's development. It is only by providing each child with adequate mediated learning experience that we can ensure his or her normal cognitive development and an opportunity for further learning. The centrality of a human mediator in the learning and developmental process of the child should not be underscored. As a result, appropriate changes should be emphazised and instituted in the preparation of teachers of young children. They should be ready to work

on the enhancement of every child's learning potential and zone of proximal development, rather than on just covering information required by the curriculum.

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